



39-21(3779)B MTC 6692.1
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Becher et al. Art Unit: 1616
Serial No.: 09/652,771
Filed: August 31, 2000
Confirmation No.: 4545
For: ENHANCED METHOD OF KILLING WEEDS WITH GLYPHOSATE
HERBICIDE
Examiner: Alton Pryor

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March 18, 2002

REQUEST FOR RECONSIDERATION

TO THE ASSISTANT COMMISSIONER FOR PATENTS,
SIR:

In response to the Office Action dated December 18, 2001, applicant respectfully requests reconsideration of the rejection of claims 1-32 under 35 U.S.C. §103(a) as being unpatentable over Parker et al (WO 9921423; 5/6/99). The present invention is directed to a method of enhancing the herbicidal activity of glyphosate comprising addition to the glyphosate of a mixture of a first surfactant having a cationic or protonatable amino group and a C₈ - C₂₄ hydrocarbyl group, such as an alkoxyated alkylamine, and a second surfactant of the formula shown in claim 1, which includes an N-acyl sarcosinate. The weight ratio of total surfactant to glyphosate a.e. is about 1:30 to about 2:1 with the weight ratio of first surfactant to second surfactant being about 1:10 to about 10:1. This mixture of the first and second surfactants unexpectedly provides glyphosate herbicidal activity that is greater than that provided by either one of these surfactants alone at an equal weight ratio of total surfactant to glyphosate. The improvement in glyphosate herbicidal activity provides the opportunity for cost savings because less glyphosate is required to be applied per unit area to achieve the same degree of plant control.

Parker is said to teach a method of enhancing the herbicidal activity of glyphosate comprising adding to glyphosate an N-acyl sarcosinate and a surfactant such as tallow amine

ethoxylate. Further it is said that one of ordinary skill in the art would have been motivated to determine the optimum amounts / ratios of ingredients through routine experimentation in order to develop the most effective composition for controlling weed growth.

Parker describes herbicidal compositions comprised of glyphosate and an N-acyl sarcosinate surfactant. The reference discloses that conventional surfactants such as ethoxylated tallow amines, which are generally present in glyphosate formulations at levels of 5 – 20 percent by weight, greatly increase the eye irritancy of these compositions such that commercially formulated glyphosate solutions must be labeled as an irritant (page 1, lines 31 – 32; page 2, lines 10-14). The N-acyl sarcosinate surfactants of Parker's glyphosate compositions are present at much-reduced levels as compared to conventional surfactants, yet are asserted to exhibit no loss of efficacy. The sarcosinate surfactants are reported to reduce eye irritancy to the extent that Parker's compositions do not need to be labeled as irritants (page 3, line 32 through page 4, line 7). N-acyl sarcosinate surfactants are present at levels of preferably 0.1 – 5 percent by weight (page 4, line 21). The reference suggests that these much-reduced levels of surfactant would reduce the cost of glyphosate formulations without loss of efficacy while reducing eye irritancy.

Parker fails to describe or suggest the mixture / method remotely approaching the amounts / ratios of ingredients of the present invention. The present claims require a first surfactant and a second surfactant in a weight ratio of about 1:10 to about 10:1. Parker states that his compositions may optionally comprise at least one additional surfactant including those used in conventional glyphosate compositions (page 4, lines 22 – 25). He does not describe any glyphosate compositions containing more than one surfactant nor does he suggest any surfactant / surfactant weight ratios. Parker's suggestion to add any surfactant to the composition would not have provided any guidance as to which of the many surfactants used in glyphosate compositions should be selected. Additionally, this suggestion would not have provided any guidance as to which surfactant / surfactant weight ratios should be selected in order to achieve enhanced glyphosate herbicidal activity.

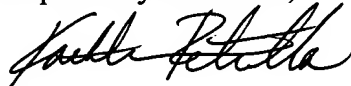
One of ordinary skill in the art would not have been motivated to add an ethoxylated tallow amine to Parker's composition because it would have been expected to increase the eye irritancy of the formulation. Parker describes N-acyl sarcosinates as a replacement for ethoxylated tallow amine surfactants. He does not describe or suggest compositions containing both surfactants, and would not have led one skilled in the art to make such a composition since eye irritancy is to be avoided. Therefore, there would have been no motivation to combine N-acyl sarcosinate surfactants with conventional glyphosate surfactants known to be eye irritants, especially where the proposed modification would have been expected to destroy the intended function of the Parker reference (i.e., reduced eye irritancy).

Furthermore, there is no reasonable expectation of success in modifying Parker's compositions to include a surfactant having a cationic or protonatable amino group and a C₈-C₂₄ hydrocarbyl group. One skilled in the art would have expected such a surfactant to greatly increase the eye irritancy of the composition. The enhancement in herbicidal performance observed by applicants when adding such a surfactant to a glyphosate composition containing N-acyl sarconsinate would not have been expected by one skilled in the art.

In view of the above, applicants respectfully submit that the pending claims are not obvious over the cited reference and request allowance of the claims.

The Commissioner is hereby authorized to charge any deficiency or overpayment of the required fee to Deposit Account No. 19-1345.

Respectfully submitted,



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